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TINGO MARIA—
A POINT FOUR VILLAGE

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FRONT COVER

Tingo María—A Point Four Village

On April 21, 1952, the village of Tingo María, Peru, will observe the tenth anniversary of technical cooperation in agriculture between Peru and the United States. That Point Four type of cooperation has given rise to spectacular development in both the village and surrounding farming area. (Photo by George A. Woolley.)

BACK COVER

Tingo María Cooperative Agricultural Station, Peru

First a new road to make settlement possible, then technical cooperation to make improved farming possible, have combined to bring boom conditions to the Tingo María area of eastern Peru.

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NEWS NOTES

Foreign Agriculture's Outstanding Articles for 1951 Selected

Lazar Volin's "A Long-Drawn Question" and Wolf Ladejinsky's "Japan's Land Reform" have been selected as the outstanding articles to appear in *Foreign Agriculture* during 1951. A panel of four judges, headed by Francis A. Flood, director of the Office of Foreign Agricultural Relations, chose the articles last month for their readability, timeliness, lasting value, and basic importance to agricultural progress.

An interesting aspect of the choices is that, although all articles in all 12 issues were considered, the top articles were both from the September issue, a special edition entitled People and Their Land and devoted to the problems of land reform. The coincidence is the more arresting because subject matter *per se* was not a consideration in the selection.

Dr. Volin is a regional specialist in the Office of Foreign Agricultural Relations. He is also the author of *A Survey of Soviet Russian Agriculture,* a monograph published last year, and of a number of other articles on land reform and Russian agriculture. Mr. Ladejinsky, who is the United States Agricultural Attaché in Tokyo, has figured prominently in the plans for Japan's land-reform program.

This is the first time that awards have been given for articles published in *Foreign Agriculture,* but it is planned to make them an annual event from now on. Two awards will continue to be given each year: one to an author within the Office of Foreign Agricultural Relations; the other to an author outside it.

FOREIGN AGRICULTURE ALICE FRAY NELSON, EDITOR

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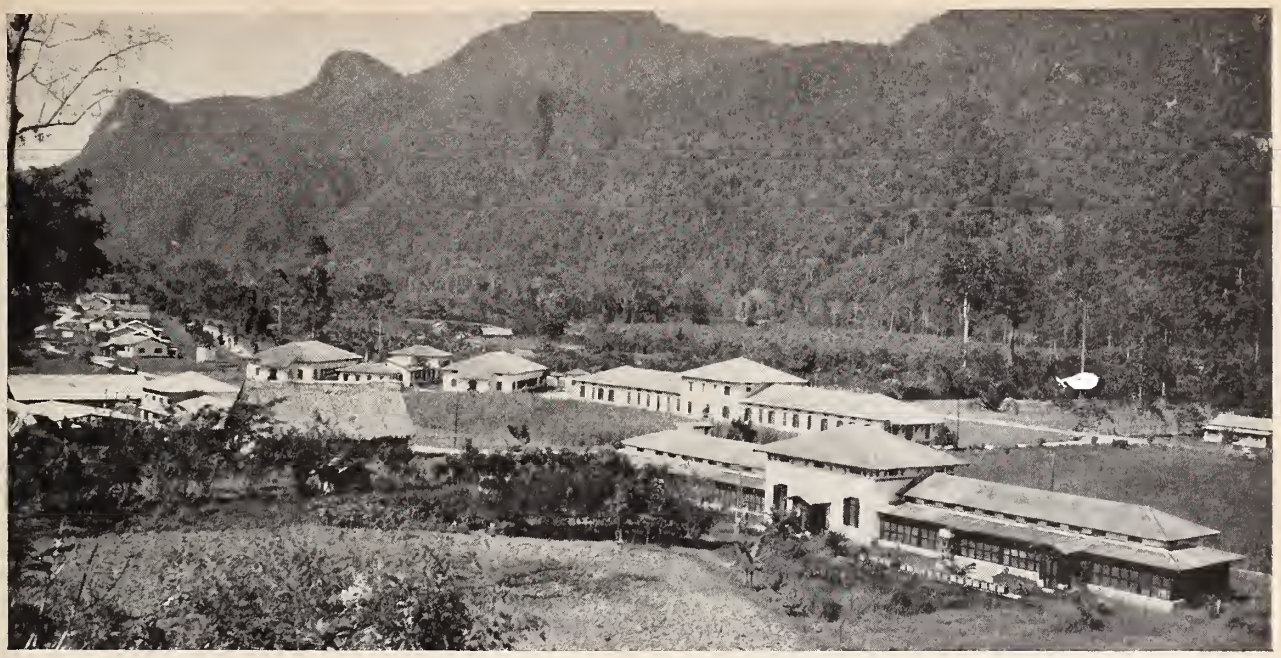

Boomtown, S. A.—The Story of Tingo María

A report on how a new road and technical cooperation, in 10 years, have carved a progressive farming community and village out of the Peruvian jungles.

by GEORGE A. WOOLLEY

It is at times assumed that regions, countries, or communities of Spanish influence and customs are inclined to be less progressive, content rather to drowse in the warm sun with little regard for either the past or the future. Rapid development, under "boom" conditions as we know them in the United States, is sometimes regarded as out of harmony with tropical ways of life. In the jungles of eastern Peru, however, a new boomtown is proving the error of such assumptions.

Tingo María is that village. It lies east of the precipitous Andes Mountains, 350 miles northeast of Lima, in an area that provides part of the headwaters of the great Amazon River. Ten years ago Tingo María and the surrounding farming community numbered no more than a few dozen newly settled families. Today, although no official census has been taken, it is estimated by the padre of the local Catholic Church (who for many years has traveled extensively over the district) that there are about 20,000 people permanently located in the Tingo María valley and on adjacent hillside farms. And Tingo María continues to grow.

The story of Tingo María is, in the first place, the story of a road—a new road built not only for reasons of national security but also for opening up a vast new area for agricultural development. It is also the story of technical cooperation—technical cooperation between the Governments of Peru and the United States so that the settlers who followed the new road could avoid failure by having expert advice on crops to grow and farming methods to follow.

It is at this time singularly appropriate to take stock of the growth and development of Tingo María, for it was 10 years ago this month—on April

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The road that made Tingo María possible. Carretera Numero 2 (Highway No. 2) opened up for settlement an agricultural area that previously was isolated jungle.

21, 1942—that the two governments signed their agreement to join forces in giving technical advice to the colonists, the same sort of agreement to work together that today is known as Point Four.

The New Road

The fantastically high regions of the central Peruvian Andes have always been a barrier to settlement of the interior. In 1904 a railroad, Ferrocarril Central del Peru, was laboriously completed. Later, when gasoline transportation became more common, a highway, Carretera Numero 2, was constructed along the same route. Paralleling and criss-crossing one another, the two units ran from Lima some 210 miles northeast to reach Cerro de Pasco, the great copper, lead, zinc, and silver producing plateau at an altitude of nearly 14,500 feet.

From that "jumping-off" place on the eastern slope of the Andes, finally the road was extended in 1932 down to Huanuco in the heart of a fruitful, old-time, irrigated valley on the Huallaga River (which rises just below Cerro de Pasco). Only the highway continued—the railroad gave up the struggle at Cerro.

As time passed the road pushed onward toward its goal of reaching Pucallpa on the Ucayali River, thereby to provide an east-west crossing of Peru and to make an ocean-to-ocean connection by way of Iquitos and the Amazon River. In 1936, about 350 miles from Lima and at an altitude of 2,300 feet, the road builders reached the junction of the Monsón and Huallaga Rivers—the present site of Tingo María.

The New Town

The Tingo María area in 1936 gave the appearance of undisturbed and unpopulated jungle. Actually, it had a long-time previous history of attempted settlement. In 1580 a Franciscan mission had been established at the junction of the rivers and in 1625 the Jesuits had set up a mission at the mouth of the Chinchao River. About 1830 the name Tingo María was given to a small settlement at the junction of the two rivers, but it remained for the greater part a village in name only. When the road reached the townsite a century later, there still was practically nothing there by way of population or progress.

With the coming of the new road, however, the agricultural possibilities of the area became apparent. In 1938 the Peruvian Government established a station to explore agricultural potentialities. A year later, as an aid to prospective settlers, the Division of Colonization of Peru's Ministry of Agriculture set up a Centro Oficial de Colonización in Tingo María. At that time the town consisted of few more than ten buildings, all of the palm-thatch type, one of which was a church and two or three of which were called hotels.

Technical Cooperation

With the road completed, and an experiment station and colonization office established, the idea of technical collaboration was advanced as a means to speed up the sound development of a primitive area that was rich in agricultural resources and would provide areas for settlement by people from the crowded coastal strip and by foreign immigrants. All of these people would need help—some of it financial but, even more important, good guidance in making homes for themselves, making their own living, and producing an exportable surplus of the strategic crops then badly needed for wartime hemispheric defense. Peru had the people, the land, and the climate. The United States could supply technical know-how, as well as equipment and materials. Why not combine them?

Thus, in 1941 negotiations were started between the two countries to perfect a cooperative program

of agricultural research and advisory services, dedicated to the needs of the vast underdeveloped area of eastern Peru. An agreement providing for the establishment of the Estación Experimental Agrícola en Tingo María was signed on April 21, 1942. Under the agreement the United States Department of Agriculture was to assign to the station a small staff of scientists and technicians, and furnish needed scientific and technical equipment. The Peruvian Government, in turn, was to supply a staff of its own agricultural specialists, and in addition was to provide land, buildings, and laborers, and meet all general costs of keeping the station operating.

That the agreement has been highly satisfactory is indicated by the fact that after 10 years it continues to be in full operation, now as part of the new Point Four program. The Department of Agriculture continues to carry out agreement responsibilities, performing the work in cooperation with the Institute of Inter-American Affairs (which, in turn, is today the Latin American regional office of the State Department's Technical Cooperation Administration).

The role of the North American technicians has consistently been that of advisers, teachers, and trainers. A total of 23 Americans have served at the Tingo María station during the decade. An average of five have been on duty at any one time. Always their aim has been "to work themselves out of a job" by training Peruvians to take their places. The success of their efforts is shown by the fact that today the Department of Agriculture has six representatives stationed in Tingo María while Peru's portion of the combined staff is three times as large: 18 technicians who include a director, agricultural chemists, extension specialists, agronomists, horticulturists, animal husbandmen, a soils specialist, a plant pathologist, a rubber specialist, a forester, a civil engineer, and a mechanical engineer. The permanence of the Peruvian staff is indicated by the fact that 10 of the members have been on the job for 5 years or more—three for 8 years, three for 7 years, one for 6 years, and three for 5 years.

Problems of the Settlers

The lure of new lands brought thousands of new people to Tingo María from the western coastal regions. Many of them had been tradespeople who knew nothing about farming. Also, a number of settlers came from Huanuco where they had been irrigation farmers, or had planted the steep slopes, or had been landless farm workers. About 5 percent were immigrants from Europe—Italian, Belgian, French, German, and Slavic people.

The first job was to clear land by cutting down trees and jungle growth and burning the dead foliage. The customary pattern was to plant corn first —any variety available. Then later crops were interplanted, such as yuca. Many farmers began to set out bananas. Subsistence crops were the first concern; cash crops were less important.

The settlers had much to learn about their new soil and climate. Generally, they found the soil of only moderate fertility, rather acid in character, and generally lacking in nitrogen. At the same time they found that the "hot-house" climate of high rainfall, high humidity, and uniform subtropical temperatures was ideal for the development of many fungi, blights, and molds affecting their crops. They were further handicapped by lack of adequate tools and equipment for the challenging job at hand. Obviously, there was a ready need for the helping hand of agricultural technicians who could spend full time in solving Tingo María's particular problems.

Ten years ago the thatched huts at the top were Tingo María's "hotels"; today the modern building at the bottom is one of two hotels in Tingo María.

The Station's Contribution

Because of wartime conditions at the station's beginning, considerable emphasis was given to strategic crops—such as rubber, cinchona for quinine, and barbasco for the insecticide rotenone. At the same time, there was obvious need to determine best methods of producing food crops. Throughout the years this combination of effort on crops for sale and crops for local food has proved practical.

Today the farmers of Tingo María can come to their station and receive advice on an impressive list of subjects:

Corn, beans, cowpeas, soybeans, rice, sweetpotatoes, yuca, barbasco or cube, bananas, abaca, kenaf, tea, citrus fruits, cacao, coffee, papaya, avocados, mangos, pineapple, garden vegetables, oil palm, rubber, reforestation, cultural methods, fertilizers, crop processing and storage, grass and legume pastures, dairying, livestock and poultry production, disease and insect pest control, and soil analysis.

Experiments with natural rubber production have led to importation of high-yielding and disease-resistant stock from all over the world. A three-part tree has been developed by grafting together a disease-resistant root, a high-yielding trunk, and a leafy crown that resists the South American leaf blight. Thirteen thousand of these trees have been distributed to growers.

Cross-breeding of native cattle with zebu and European dairy breeds has been done successfully, providing improved dairy breeding stock for sale to settlers. Beef animals are being improved similarly.

Settlers are learning, without costly trial and error, the best uses to make of their lands as a result of the land classification program, which so far has covered nearly 75,000 acres.

A total of 1,594 new varieties of food, forage, fiber, and industrial crops have been introduced and tested. A new variety of corn has more than doubled yields and has largely replaced earlier varieties. Similarly, new varieties of beans and rice have more than doubled earlier yields.

The Tingo María station does not overlook the womenfolk in its assistance to community development. A program of domestic science teaching for the wives of colonists was started in 1947. A "profesora de ciencias domesticas" was employed in the Department of Extension to start the program. Sewing machines, dishes, kitchen utensils, and a kerosene stove comprised the equipment. Later the program was expanded to include the services of two domestic science teachers. Classes in foods and clothing work are held in Tingo María the year around, and in 9 additional communities for 3 to 6 months during the year. It is estimated that 300 homemakers have benefited from this work. This year 367 girls have been receiving domestic science instruction.

African oil palm, one of the world's highest-yielding vegetable oil plants, has been introduced to Tingo María's colonists by the cooperative agricultural station.

TABLE 1.—*Crops shipped from Tingo María area, 1946 and 1950*

Commodity	1946	1950
	Short tons	*Short tons*
Total for 30 commodities	3,727	21,977
Ajies, green (red peppers)	12	64
Bananas	766	17,505
Cacao	263	484
Coffee	[1] 48	55
Corn	980	689
Cube (barbasco)	334	967
Hides, green	172	185
Oranges	58	395
Rubber	626	592
Yuca	13	343

[1] For 1949.

Tingo María Today

The boomtown of Tingo María, exclusive of the surrounding agricultural population, today numbers more than 6,000 inhabitants. Its population increased sharply in 1946, when the services of the agricultural station became known, and again in 1948, as land values began to rise rapidly.

The community profitably supports three large sawmills, six small brick plants, a cement block plant, and three carpenter shops that turn out mill work. Also, construction has begun of an extensive plant to process daily some 2,000 pounds of the confection, dried banana "figs."

Two banks are doing a brisk business in their new buildings, and a third banking institution maintains a full-time representative in Tingo María.

Earlier simple houses of the townspeople are being replaced by more modern brick homes with concrete or tile floors.

Progressive Tingo María is determined to provide education for its young people. Its present public school, built in 1943, was crowded with 575 pupils in 1951. There is good news from the Ministry of Education, however, that this year a million soles ($175,000) will be spent for new school construction in Tingo María, and the expanded organization may include school bus service to adjoining communities.

Women, too, benefit from the guidance of the cooperative agricultural station. Here, Rosa Valdevieso, a home demonstration agent, teaches two Tingo María girls how to sew.

Both Catholic and Protestant churches are active in the area. Two padres and an assistant serve the parish headquarters and large Catholic Church in Tingo María and also travel for services and other religious activities to all parts of the zone.

Early Tingo María had few recreational or entertainment facilities, but those of today are like those of any modern small town. A motion picture theatre, a swimming pool, three well-organized "social clubs," two public pool halls, a so-called night club, a boxing arena, and a cock-fighting ring. The agricultural station maintains a community tennis court, which is also used for basketball, small court "futbol," and volley ball.

Successful Settlers

Every town takes some measure of pride in the success gained by its citizens. Tingo María is no exception. Everyone knows about Sr. Alejandro Caycho, for example. He saw no future in his small truck garden near Lima, and accordingly moved to Tingo María in 1939 with his family and modest possessions. His grant of land was 37 acres. He and his sons worked hard, cleared the land, and planted rice, corn, yuca, and tobacco, and raised a few chickens. He was able to feed his family but that was about all. In 1942, he came to the agricultural station for advice and became a faithful cooperator, following the advice diligently. Soon he was successfully growing commercial crops of coffee, rubber, oil palm, and bananas. He bought more land, and purchased two trucks to transport bananas to the markets of Lima. Now he is building a new, large brick and concrete home. Sr. Caycho has recently turned over management of the farm to his grown sons and is able to live in retirement in his former home city of Lima. Tingo María, in 13 years, has given the family independence and a future.

Then there is Sr. Federico Tong, of Chinese parentage, a resident of Peru for 40 years. He sold a small business in Lima and moved to Tingo María where, beginning in 1942, he also sought the advice of the agricultural station. Today, Sr. Tong's operations are many and extensive, including production of tea, yuca, rubber, avocados, hogs, and sugarcane for manufacture of commercial alcohol. Two of his daughters are now receiving education in Lima to become dental technicians. Last year, on the occasion of National Agricultural Day, Sr. Tong received from the President of Peru a gold medal award in designation of what North Americans might call a "Master Farmer."

Conference on Agricultural Services to Foreign Areas

by CANNON C. HEARNE

The annual Conference on Agricultural Services to Foreign Areas, held in Washington February 11-14, marked a great step ahead in the mobilizing of United States agricultural competence behind this country's technical cooperation program abroad. Representatives of 48 land-grant colleges and universities attended the Conference, as well as officials of the Mutual Security Agency, the Technical Cooperation Administration of the Department of State, and the Department of Agriculture.

Purpose of the Conference, held at the Department of Agriculture, was to make more effective the cooperation between Federal and State agencies in carrying out foreign agricultural programs. It was the second conference of the college foreign program officers and Federal officials in Washington. The first meeting, in March 1951, was successful in formalizing this cooperation to some extent. But it was a pioneering effort, and the participants could not both visualize and resolve all problems in a single session.

Since that meeting we have been through a period of problems—of real participation in technical cooperation. Several of our land-grant colleges already are working in other countries under direct institution-to-institution relationships, and negotiations are under way for others. The colleges trained a large share of the record 3,500 foreign visitors from 85 countries and dependencies received by the Department of Agriculture last year and did it with increasing effectiveness. The colleges helped in many other ways. These experiences, and the changed attitudes that followed, were a solid basis for our discussions of problems and our look at the future.

Dean E. L. Anthony of Michigan State College set the Conference theme when he told the group that, "Our Land-Grant Colleges during the past year have become internationally minded. They have accepted international responsibility." Of the training of foreign visitors, Dean Anthony said, "It has been of tremendous benefit. . . . We have had many able foreign visitors, and they have given us much. The program is a two-way street."

The land-grant college representatives were told by Secretary of Agriculture Brannan that the "grand strategy" of this country is a two-handed job. "With one hand we are seeking to deter communist aggressors from risking a third world war. With the other, we aim to help the hungry and disadvantaged peoples of the world alleviate the misery and hopelessness on which aggressive communism breeds. We seek to give these people the solid hope for a better life which is the indispensable requisite for lasting peace. We need to do both parts of this two-handed job. One without the other is not enough."

In work sessions, the college officials sought ways to make their foreign program operations more efficient in the future. The work was divided among five committees: (1) recruitment for foreign assignment, (2) financial arrangements with land-grant colleges, (3) land-grant college relationships with foreign governments and institutions, (4) planning and implementing study programs for visiting foreign technicians, and (5) planning special short courses for visiting foreign technicians.

The committee on recruitment recognized the "great contribution which the Point Four and similar foreign aid programs can make toward improving our international relations, the food supply, and living conditions of the cooperating countries of the world. . . ." It added that "this program depends on the recruitment of a large number of technically trained personnel." Since the beginning of the technical cooperation programs, the land-grant institutions have cooperated with Federal agencies in the recruitment of competent personnel. In the past year they have aided in developing a national roster of professional agriculturists that is being used by the Department of Agriculture and other agencies in recruiting.

The committee on relationships with foreign governments and institutions advised that "The role and outstanding accomplishment of Land-Grant colleges and universities in the United States has

been the coordinate development of resident instruction, research, and extension in the field of agriculture, which has been a vital force in bringing the United States from the underdeveloped country of a hundred years ago to the position it holds today. Situations in other countries abroad might be improved by the application of these institutions in a cooperative manner in the development of institutions abroad. It is the sense of this meeting that there is a desire on the part of the Land-Grant institutions to cooperate closely with Federal agencies of the U. S. Government in the planning and execution of foreign technical cooperation programs in the field of agriculture. . . ."

Four land-grant institutions have within the past year begun direct institution-to-institution relationships with foreign schools under Point Four to develop agricultural and educational services. Michigan State College has an agreement for long-term cooperation with the two agricultural colleges in Colombia—the Facultad Nacional de Agronomia at Medellin and the Facultad de Agronomia del Valle at Palmira. Purdue University is cooperating with the Rural University of the State of Minas Gerais in Brazil to aid in developing an agricultural and home economics extension service and a school of home economics there. The school of home economics will be the first in Latin America. The University of Arkansas is aiding the Republic of Panama in agricultural improvement, with its work centered at the National Institute of Agriculture at Divisa. Utah State College is a direct participant in the Point Four program in Iran.

In addition to these four agreements, preliminary negotiations are under way for other similar arrangements, including Cornell University with the College of Agriculture at Los Banos in the Philippines and Texas A. and M. College with the National College of Agriculture at Chapingo, Mexico.

Other land-grant colleges have contracted to provide special services under Point Four. The University of Minnesota, in cooperation with the Department of Agriculture Library, is carrying on a project to facilitate the exchange of publications among agricultural institutions of the United States and Latin America. The University of North Carolina has contracted to furnish biometrical consultant and analysis services to the United States Government either within or outside continental United States. It is now carrying on work of this type in Latin America.

The conference paid special attention to problems relating to the training of foreign visitors. It is OFAR's job to plan and coordinate the agricultural training of foreign people brought to this country under exchange projects of other Federal agencies—including the State Department, the Mutual Security Agency, and the Army. These training services are provided under contract with those agencies. OFAR also assists so-called "non grant" visitors, most of whom are self-financed or sponsored by their governments or international agencies.

Roughly one-third of the trainees received by the Department of Agriculture last year fell in the "grant" category, the other two-thirds in the "non grant" group. Although the "non grant" visitors were more important numerically, the other category represented a much greater training load, since training services for "grant" visitors usually cover longer periods and require more detailed training programs and itineraries. Most of the "non grant" visitors were referred to the Department by American embassies abroad, foreign embassies in Washington, or by Federal or international agencies. They were people who are coming to this country anyway—without United States invitation or financing. Most of them were leaders, and thus the training and good-will impact of this country's hospitality was great. The flow of foreign visitors in 1952 is expected to be roughly equal to 1951.

Training programs are planned by OFAR's training officers working with various bureaus of the Department and with the land-grant colleges. A large share of the trainees received by the Office are sent to one or more of the colleges for a substantial part of their training, while the others are assisted primarily by various bureaus of the Department. Each land-grant institution has designated one of its staff members to act as OFAR's "contact" for training and other foreign program matters. In most cases the person designated was the officer who represented the institution at the February meeting in Washington.

The committee on planning short courses devoted itself to the special short courses that will be presented for foreign agricultural trainees by land-grant colleges in cooperation with the Department of Agriculture and the Mutual Security Agency. During the next 6 to 12 months, special short courses on about 15 general subjects will be held. According to the committee's recommendations, the De-

partment and MSA will propose dates and locations for courses according to the preferences of the colleges and needs of the trainees. Each short course is expected to last 2 to 3 months and have 15 to 30 participants from several European countries.

The Association of Land-Grant Colleges and Universities and its members have been intimately associated with the development of technical cooperation programs of the United States. These institutions, because of their success in improving agriculture and educating rural people in this country, have a unique opportunity to apply their competence and experience to problems in other countries. They also have an opportunity to stimulate State and local people to greater interest in world affairs. As the land-grant institutions participate more and more directly in this country's foreign programs, the people of their States can participate more and more directly in the development and implementation of the programs. The second Conference on Agricultural Services to Foreign Areas was a milestone in the participation of our agricultural institutions in United States international relations.

Decline of Plantation Agriculture in Indonesia

by JOHN E. METCALF

Indonesia has long been unique among the countries of Southeast Asia because of the strong dual nature of its agrarian economy—on the one hand, a fairly self-contained peasant economy producing food crops primarily for personal consumption; on the other hand, a highly developed and well-diversified plantation industry supplying world markets with great quantities of tropical agricultural products. In the years just prior to the Second World War, more than 2,400 privately operated plantations (predominantly Dutch in management) exported about 35 percent of the palm oil entering world trade, 30 percent of the sisal fiber, 90 percent of the cinchona (from which quinine is extracted), 15 percent of the tea, 5 percent of the coffee, 10 percent of the cane sugar, 10 percent of the leaf tobacco, and 20 percent of the natural rubber. In addition, Indonesian smallholders produced another 15 percent of the world's rubber supply, about 75 percent of the kapok, 85 percent of the black pepper, and 30 percent of the copra. Among the countries importing these products, the United States has for many years been second only to the Netherlands.

Postwar Disturbances

During the past 6 years, the world has waited for the revival of large-scale plantation exports from the Indies. But economic recovery from the effects of the Japanese military occupation has been delayed by a succession of other disruptive factors—the forceful return of the Dutch after the war, the lengthy "police action" carried out by the Dutch Army, the final granting of independence to Indonesia in December of 1949, and the subsequent civil strife as the Republican Government has attempted to extend its hegemony throughout the archipelago.

This lack of domestic tranquility, which has characterized the postwar scene, has had a most serious effect on the export trade of the islands. During 1951 agricultural exports, which currently account for about 70 percent of the value of all Indonesian exports, only reached one-half the tonnage averaged during the prewar period 1935-39. The gradual climb to even this modest position is graphically illustrated in the chart below.

Many people assume that once the new government restores law and order, quiets labor unrest, and guarantees the protection of private property, the plantations will soon be able to increase output to a level approximating their prewar position. Then, so the assumption goes, the West will once again be able to import from these islands substantial quantities of palm oil, Java coffee, cane sugar, the famous Deli cigar wrapper, tapioca prod-

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ucts, and cordage fibers. However, there are several important factors that are overlooked in this optimistic appraisal of the situation.

Long-Run Trend

The long-run trend in agricultural exports from Indonesia has been unmistakably in the direction of a decreasing share for the plantation sector of the economy. This has resulted from the gradual awakening of the peasant farmer to the possibilities of producing for the export market. The hard task of pioneering was done by the plantations. European planters were the first to introduce many of the present commercial crops cultivated in Indonesia—rubber from the Amazon Basin, tobacco from South America, the oil palm from tropical West Africa, coffee from the Belgian Congo, cacao from Brazil, and tea from China, India, and Japan.

Protracted scientific research produced new varieties of these plants suited to local climate and soil. Costly experimentation developed better methods of cultivation. Through the prewar extension service of the Colonial Government's Department of Agriculture, the knowledge derived from this specialized experience was disseminated to the benefit of rural areas. It took hold slowly, but with each succeeding year more peasant farmers planted commercial crops as well as their traditional rice, cassava, and sweetpotatoes.

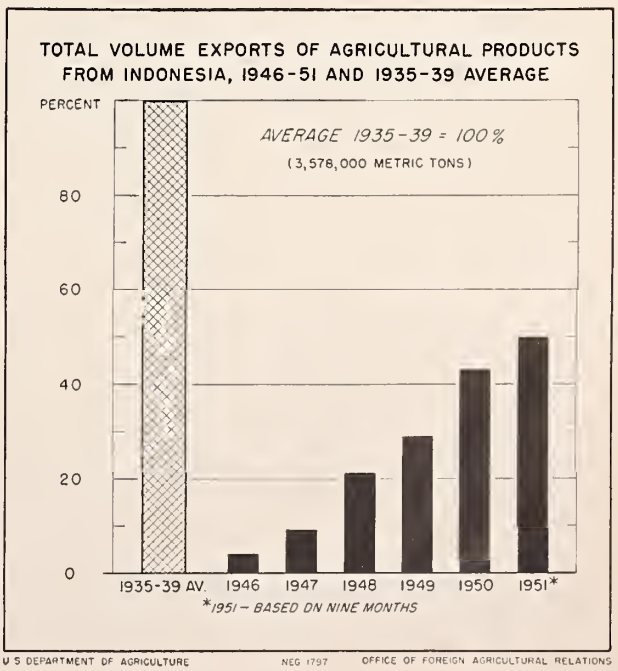
At the turn of the century the large European-operated plantations produced 90 percent of the value of all agricultural exports from Indonesia. By the beginning of the First World War the smallholders had increased their share from one-tenth to one-quarter, and during the 10-year period after 1925 their share averaged about one-third. In the few years just before the Second World War peasant cultivators furnished about 40 percent of the value of all agricultural exports, and the plantations 60 percent. In 1948, the first postwar year during which a fair volume of exports was achieved, the prewar relationship was reversed, and smallholders produced about 60 percent of the value of all agricultural exports. In 1949 their share dropped to one-half, but during 1950 and 1951 it was more than two-thirds.

Thus we observe that the trend is clearly in the direction of a gradually diminishing importance for plantation agriculture. It is true, however, that the normal movement of this trend has been accelerated by the temporary factors outlined above—factors that have had a more disruptive influence on plantation agriculture than on smallholders' cultivation. But there is a second group of factors now operating to contract the scope of plantation agriculture in Indonesia—factors having little to do with the prewar secular trend or temporary postwar disorders.

Postwar Food Shortage

By far the most important consideration in a contemporary analysis of the Indonesian agrarian situation is the central problem of a food shortage. Continually increasing population, coupled with accelerated urbanization, is putting heavy pressure on the available food supply. In addition, the leveling influence of postwar income redistribution, expanded monetary demand, and emotional nationalism are creating an increased measure of dissatisfaction with the present shortage of food staples. Although just before the recent war Indonesia had achieved a precarious internal balance of food supply and demand, it has been importing a larger amount of rice in each postwar year—117,000 metric tons during 1947, 358,000 tons in 1949, and about 450,000 tons of milled rice during 1951.

Plantation agriculture in Indonesia has taken two distinct forms: the hill cultures, which are perennial crops (coffee, tea, cacao, cinchona, oil palm, and rubber) grown on upland terrain obtained primarily by long leasehold from the government; and the field crops (sugar, tobacco, tapioca, and to some extent cordage fibers), which are cultivated



on arable lowland fields generally rented for shorter periods of time. It now appears that both government policy and public sentiment regard with increasing disfavor the use of present or potential cropland for cultivation of commercial export crops.

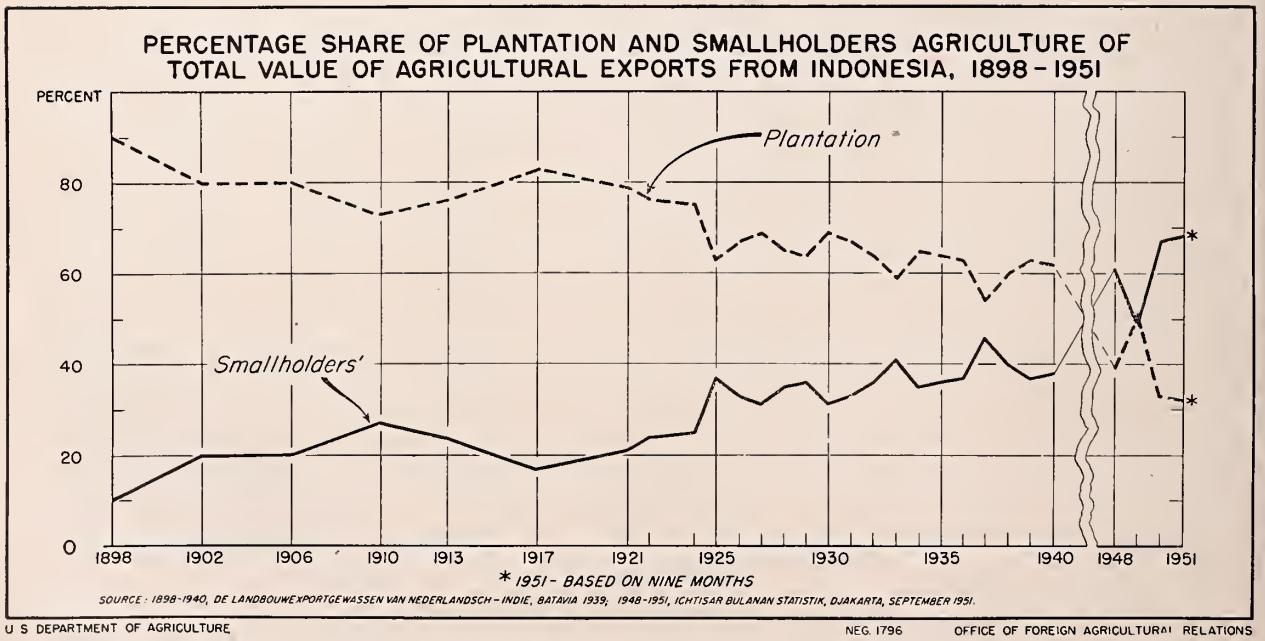
During the wartime occupation the Japanese deliberately settled native farmers on some of the plantations in order to obtain greater food production for the local population. Both during and since the war squatters have occupied large areas temporarily uncultivated by plantation enterprises. At present the Republican Government is initiating a large-scale program of land redistribution designed to bring under cultivation by peasant farmers much of the arable cropland held in reserve by the various plantation enterprises.

Outlook

A study of 1950 export statistics reveals the significance of these events. Whereas 1950 plantation exports of the six principal hill culture crops mentioned above totaled 57 percent by volume of their 1938 level, plantation exports of the four field crops only reached 6 percent of the volume achieved during 1938. The return of domestic stability will undoubtedly permit some improvement over the 1950 situation in both categories, but this improvement will be achieved through more efficient production rather than any significant increase in the reduced acreage now devoted to them. It seems extremely unlikely that any of the four field crops—sugar, tobacco, tapioca, and sisal—will again achieve in Indonesia the importance held before the war.

As for the hill cultures, it seems probable that an increasing proportion of some—coffee, tea, and rubber, for example—will be grown by smallholders. Indeed, this trend is quite apparent in the case of rubber, where only 25 percent of current production is being marketed by plantations. Other crops, such as the oil palm, cinchona, and cacao, require either too much capital investment or overly complicated methods of propagation to be at present adaptable to small-scale cultivation. However, cacao has never been of much importance in the Indonesian economy and synthetic antimalaria drugs are reducing the importance of quinine on the world market.

Plantation agriculture in Indonesia, as well as smallholders' cultivation, has in the past been centered on the island of Sumatra and densely populated Java. The government's ambitious colonization schemes should serve eventually to open up new areas for cultivation in the other islands of the archipelago, though there are many difficulties to be overcome before any significant population transfer can be achieved. In terms of the forseeable future, it seems unlikely that foreign capital could be attracted in sufficient amounts to develop any of these new areas for plantation agriculture. And the Indonesian Government is at present too concerned with the domestic food supply to serve as the financial sponsor for any such export projects.



Agricultural Information, Please!

by CHARLES E. ROGERS

In rural areas of the Caribbean, where many farmers are unable to read or write, an effective means of getting agricultural information to them is by calypso, native song of the region. From time to time, country poets, troubadours of better agriculture, travel from village to village singing messages of scientific agriculture and technical know-how.

A variant of this minstrelsy of advanced farming is the agricultural information interpreted by the native dancer of Burma. This artistic rural educator dramatizes his story in pantomime. The story depicts the heroic son of the native cultivator who follows approved scientific farm practices, in triumph over the villainous son of the slovenly farmer who has turned a deaf ear to the farm advisor.

A Moslem priest in Southeast Asia will help the farm advisor in his parish reach farmers with agricultural information. After religious services, the advisor is permitted to tell the farmers in the mosque about scientific agriculture.

For a small fee a professional storyteller of Libya will publicize a farm message from the agricultural extension worker between folk tales he tells native farmers loafing at the coffeehouses of evenings.

These are some of the unusual ways that news of improved farm methods reach farmers who cannot read and never hear the radio. These methods were reported to an information workshop composed of participants from some of the 38 foreign countries represented at the Conference on World Land Tenure Problems, convened at the University of Wisconsin last October.

In planning the workshop, we thought our first job would be to convince our participants of the vital role that information plays in any action program, such as land reform, designed to reach farmers and secure their acceptance. Then we were prepared to follow through with a course of instruction on how to develop the information program and prepare publicity tools for it—everything from films to flannelgraphs, from radio scripts to puppet shows.

After the course got under way, we discovered that what we needed was something quite different from what we had planned. The delegates already appreciated the importance of information tools in adult education, or what we in the United States call extension work. More than that, they were able to tell us a great deal about ways of communicating information to farmers in the countries they represented. The workshop report [1] therefore sheds new light on how to influence rural people in lands of diverse culture and varying degrees of economic development.

Oddly enough, one of the many ways agricultural leaders contrive to get their message across to the illiterate farmer is to send him a printed leaflet—one that is made up mostly of pictures, with only a little text. When an illiterate farmer gets printed matter in the mail, especially if it is from the government, he gets somebody to read it to him as soon as possible—the village teacher, priest, or government official. In nearly every village someone can read. Sometimes a schoolboy brings home an agricultural leaflet; his parents are curious and ask him to read it to them.

But best of all is the successful demonstration. Everybody at our workshop agreed—whether the information is intended for literate or illiterate farmers, for those advanced or backward, American, Latin American, European, Asiatic, or African. Furthermore, the best type of demonstration is the one in which the farmer to be persuaded takes part.

A farmer who has never seen a long-handled hoe will quickly learn its advantages when he holds it in his hands and uses it. Seeing a neighbor and friend use it is almost but not quite as strong an incentive. The demonstration falls to a third level

[1] "Influencing Rural People—A Report on Workshops on Information Methods at the Conference on World Land Tenure Problems," University of Wisconsin, Madison, 1951.

Dr. Rogers is Publications Editor, Bureau of Agricultural Economics, U. S. Department of Agriculture. The information workshop of which he writes in this article was conducted jointly by him and Dorothy Cochran of FAO, in cooperation with Bryant Kearl, Head, Agricultural Journalism Department, University of Wisconsin, and members of his staff. The workshop was part of the Conference on World Land Tenure Problems conducted by the University of Wisconsin, the Department of State, and the Mutual Security Agency. James O. Howard, OFAR, and Dana Reynolds, Mutual Security Agency, assisted in organizing and conducting the workshop.

Information workshop session at the recent Conference on World Land Tenure Problems. How to inform farmers about agricultural programs and practices was a subject of great interest to many participants.

of stimulus when it is seen in a picture, as a "demonstration in print," though it still has strong appeal.

Even though a demonstration may convince farmers of the advantages of improved methods it still may not move them to action. A county agent from Southeast Asia attending our workshop related such an experience, successful to a certain point but failing to attain its ultimate purpose. He rented land at his own expense and planted and cultivated rice according to scientific principles.

"The farmers came and saw my rice. They agreed my way was better than theirs. Yet they wouldn't change, even though it meant more rice for them, and more money for the rice they sold."

He thought it might have been different if the farmers owned the land they tilled. Most of them were renters.

We decided that at that point the problem got beyond the information workshop and belonged to the Land Tenure Conference as a whole. After land reform laws are passed, however, information techniques play an important part in putting the statutes and regulations into effect. This was illustrated in Japan in the distribution of the land to the 6 million cultivators of that country after World War II. Keiki Owada, our Japanese workshop participant, gave us an illustrated lecture on how information tools were used in his country's land reform program—the colored film strip, the illustrated leaflets, the posters, the flip-book, the news stories, and the radio scripts.

With the highly qualified talent at our disposal in the workshop, we decided to try our hand at producing some laboratory information pieces to demonstrate methods and techniques. Two Iranians —Emir Birjandi and Mohammed Reza Ghavam— gave us our first problem. They asked us to help them organize an information program for a fictitious credit cooperative in Iran.

We decided to produce three types of material—an illustrated leaflet, a poster, and a tape recording.

The poster group worked out two "comic strip" posters, which illustrated the advantages to farmers of the credit cooperative over the bank and money lender. Our Iranian participants insisted that the farmers in the pictures should look like Iranian farmers, so that every producer who saw a picture would identify himself with the man in it.

After consultation with our Iranian advisers, we decided to make the tape recording a question-and-answer interview between a suspicious farmer and a village leader who knows about credit cooperatives. It would be played in the market place after an introduction by a village leader, and followed

with a talk by another village leader. This was the easiest information piece to make, as we just recorded an interview between Mr. Birjandi and Mr. Ghavam, who took the roles of farmer and leader.

The leaflet was developed a little more slowly because the leader of the section, Manuel Rodriguez of Cuba, wanted an illustration of a colony of bees as a symbol of cooperation. But our Iranian delegates said bees were unknown in Iran, except in the mountains, and suggested that we use instead one picture of a man with his oxen and cart stuck in the road and another showing many men pushing the cart out, to illustrate cooperation.

The leaflet was profusely illustrated. Few Iranian farmers can read. But if a farmer is handed a leaflet that is heavily illustrated, his interest is usually aroused and he will arrange to have somebody read the text to him.

Our next project was presented as a workshop problem by Euthymios Papageorgiou of Greece. Mr. Papageorgiou wanted us to help him convince the farmers of a Greek village of the advantages of consolidating their fragmented holdings—those minute scattered strips of land that make farming in many European countries so burdensome and inefficient. Jan van Rossem, having the same problem in his country, the Netherlands, volunteered to help make the tools for this campaign.

They produced a flannelgraph on which the 30 strips of land owned by one farmer were represented by pieces of colored paper scattered across the flannel expanse, which represented the entire area of the holdings owned by farmers in the village; then the pieces were brought together—consolidated.

Mr. Papageorgiou and Mr. Van Rossem also made an illustrated take-home leaflet and a sequence of captions for lantern slides.

During the 4 weeks of the workshop we tried to distill from our activities certain principles of informational practice that apply universally.

The choice of information tools is influenced by the stage of economic development of a country. Newspapers and magazines are widely read only in countries having a rather high degree of industrialization. Radio requires receivers in the hands of the desired audience. Filmstrips and motion pictures rely on projection equipment. Above all, the level of literacy sharply limits both the scope and the instruments of an information campaign.

But our participants concurred on the rules that follow, to govern information practices generally, in almost every land.

Information or education is a vital part of any agricultural program, since most programs must be widely understood to be effective. In no country can a law be effective over a long period unless it has public understanding, acceptance, and support.

Workshop participants emphasized the importance of tying the information program to a sound action program, backed with necessary legislation or other support. Unless the farmer has some means of doing what the information program urges him to do, the program is of little value. An action program without an information program is not very effective, nor is an information program with no plan for action.

Any channel of information is a potential channel for carrying agricultural information. In planning an agricultural information program, it pays to ask how the farmers of the country now get news. How do they learn of an election, of a new law, of a wedding, of a flood or other disaster? These are the channels for spreading agricultural information, too.

Every community has opinion leaders, and a good step toward a successful information program is to convert the community opinion leaders first.

In dealing with some problems that seem insoluble due to deep-seated prejudices and traditions, it may be better to aim at the younger generation. Young people are often more willing to accept new ideas than are older people.

The individual is influenced in proportion to the number of different ways in which the same idea is brought home to him within a relatively short period. A farmer may first hear of an improved practice on a radio program, then see an article about it in the paper, then talk to a farmer who has tried the method, then attend a meeting where a movie demonstrates the practice. If all these contacts are made within a relatively short time, the farmer is more likely to be influenced by the idea and to try it himself.

The workshop stressed the importance of good planning. Those designing the program must know what persons or groups are to be reached and what specific suggestions the program will give.

It may be easier to win administration support for an information program by starting with a project that will provide easily demonstrated results. One successful information program is a good talking point in building another program.

The successful information program for farmers must be planned from the farmer's point of view. It will answer the questions that he will probably want answered, in the language he knows and understands. It is only natural that the over-all benefits of the program will mean less to him than how he can benefit by it.

Even where the written word is not capable of reaching the bulk of the population, written materials will be the backbone of any information campaign. Moreover, levels of literacy are improving all over the world, and a change can be expected in many countries even in the present generation.

Farms for Workers at Pichilingue

By JOHN P. KEENAN

"How're you gonna keep 'em down on the farm?" asked a popular song of a quarter century ago. The question still persists. In Ecuador, however, an agricultural station jointly operated by the Governments of the United States and Ecuador, at Pichilingue, has found its own answer to the question as it relates to the station's employees. Give workers a chance to live on some land and farm it as though it were their own. Give them advisory assistance. And give them a personal "stake" in the success of each enterprise.

The Pichilingue station offered these opportunities to its workers a year ago. They responded eagerly. Today about half of them are living on 25-acre farms that they have leased from the station. They are growing much of their own food—rice, corn, and yuca—and selling some of the produce. And they are growing permanent crops also—bananas, plantain, coffee, and cacao—for study by station specialists. So far, 27 farms-for-employees have been carved out of the forests and about 3½ acres of land cleared on each farm. Workers have built their own homes from the bamboo and timbers taken off their land.

The problem of keeping an adequate supply of labor available has been of long standing at Pichilingue. The station is located in a sparsely populated section. Workers' pay has been relatively low, and food costs have been high. No wonder then that experienced labor sometimes has been hard to get and to keep and that much of the station's 3,000 acres remained undeveloped. But the experiment in employer-employee relationships, since its initiation last year, has brightened the outlook for both station and worker.

Today we find that the station has workers who want to remain permanently. It is developing station properties with minimum strain on its budget. It has plantings of permanent crops for scientific study. And it has in each farm a show place, where the benefits of applying improved agricultural methods are plainly visible.

The workers have the means of supplementing their pay, in food and in cash. They have an opportunity to establish homes on land that they can use as though it were their own. They have a chance to become better farmers. In short, they have the opportunity to make better lives for themselves and their families.

Mr. Keenan is Farm Manager, Estación Experimental Tropical, Pichilingue, Ecuador.

Technicians and employee-farmer of the Ecuadoran-United States agricultural station discuss contour rice planting.

Factors Affecting Britain's Food Position

by WILLIAM KLING

Britain had a change in national administration in November 1951 and its problems of food and agriculture are being reexamined. The new government may find some avenues for removing controls by reducing the amount of bulk-bought commodities and the possible removal of one or two foods from rationing, such as cheese. There will also be a reduction of 40 percent in the food subsidies. However, most controls will probably continue into 1952-53.

Minister of Food Lloyd George indicated, however, that programs and policies would be difficult to change when he reportedly said "It was the Government's object to restore private buying of food, but this was not possible so long as the United Kingdom had not the means to pay for the food."

"The means to pay for food," especially when it is imported from "hard currency" countries, is one of the problems that loom large in Britain, for its small farm acreage cannot feed its predominantly urban population. Great Britain has long been the world's largest food importer. Before the war, in 1935-39, Britain imported almost 70 percent of its total food supply. Since the war, despite vigorous programs to produce more food at home, about 60 percent is still bought on the world market.

Broader distribution of purchasing power and growing population at home, higher prices and uneasy political conditions abroad—these are some of the factors that govern Britain's food position.

What is that position? How well are the British people eating now and what prospects do they have for eating as well, or better in the future?

Food Consumption

Qualitywise, the British diet has deteriorated since prewar days. It has been most adversely affected by the lower meat and sugar supplies. Less butter and fruit have been available. But there have been increases in the consumption of other foods, foods that are generally considered to be of a lower quality, such as grains, potatoes, and fats and oils other than butter. And the greater intake of whole milk and vegetables may be considered desirable from a nutritional viewpoint. The average British housewife is buying roughly 17 percent less beef, mutton, poultry, fish, and other meats than before the war, about as much cheese, and between 50 and 60 percent more fresh milk.

The unfavorable impact of consumption changes has been greatest on the middle income group, whose relative income has changed little since before the war. High income groups can obtain expensive off-ration substitutes for items in short supply, and low income groups now have relatively more money or reap most benefits from food subsidies, although these were reduced more than one-third in the new Budget announced March 11. This latter section of the population may be eating better now than before the war.

The British are expected to get an average of about 2,975 calories this year compared with 2,980 in 1951 and 2,890 before the war. The people need more calories now than they did before the war because they work harder now; besides, they have a higher purchasing power in terms of their own currency and are in a better position to buy what is available.

Demand for Food

Changes in the income structure have contributed materially to the increased demand for food in the United Kingdom. Low income groups get a greater proportion of the national income now than they did before the war, and these groups spend a relatively larger proportion of their income on food than do high income groups.

Britain's increasing population also makes greater demands on the food supply. The total population, including the armed services, was an estimated 51 million on December 31, 1951, compared with 50.7 million a year earlier and a 47.2 million average in 1934-38. A significant feature of the population change is the increasing proportion of older people, which affects demand for certain types of food.

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Although Britain has had many food problems since the war, it has made every effort to safeguard the health of its children.

Prices and Imports

Food costs in the United Kingdom have risen substantially in the past few years because of higher import prices and greater domestic production costs, as well as increased demand—forces that have been stemmed only partly by rationing, price control, and subsidies. Because of the controls, however, prices are still maintained at lower levels than would exist in the free market.

A primary factor influencing import prices was the devaluation of sterling in September 1949, which resulted in higher prices not only for dollar items but also for foods from other areas—meat from Argentina, for example. The upward trend stimulated by devaluation subsided finally, but then an even greater stimulus was provided by the changed demand picture presented by the Korean conflict, and prices have continued to rise. Prices of domestically produced foods have also increased because of higher wage, fertilizer, and other costs, and the use of price incentives to expand output.

Many proposals have been made to stem the trend toward higher prices, but since Britain is dependent on imports for about 60 percent of its food, it is at the mercy of fluctuations in world price levels, which it can control only in part by virtue of its own trading ability and its large purchasing power.

Aside from short-term movements—devaluation and the Korean conflict, for example—the United Kingdom must face several factors tending to increase food prices in the long run. One of them is the changed economic and political situation in which Britain finds itself in the world. Another is that the food-exporting countries are experiencing increases both in population and in purchasing power, with the result that prices are rising in these countries and their exportable surpluses are being reduced. These are factors that were summarized in a statement made by Mr. Herbert Morrison when he was Foreign Secretary: "The world in which we could buy cheap and sell dear has gone for a long time to come, perhaps for good."

Britain's difficulties as a major food importer have resulted also from the expenditure of resources during wartime with the consequent liquidation of foreign investment and dislocation of the economy. And changes in world production patterns have placed the United Kingdom in a relatively less favorable position than it formerly enjoyed. Industry has grown rapidly in many other countries and has increased the competition and lowered the

relative productive and earning power advantage of the United Kingdom.

In addition to these underlying factors, the requirements of rearmament in the next few years will absorb an increasing amount of goods and services and may reduce the export potential. Also, dollars used for imports of industrial goods needed in the defense program will reduce the dollar exchange available for other commodities such as food.

The reduction of Britain's overseas earning power may be offset in part by greater domestic employment compared with the prewar and by secularly improved productivity.

Finally, it should be noted that Britain has huge bargaining power by virtue of the size of its market. While world food supplies are short, a great dependence on imports places Britain in a disadvantageous bargaining position, especially for marginal supplies. On the other hand, with more abundant world supplies and reduced demand, Britain would be in a better position to conclude favorable contracts, especially for marginal supplies for which other buyers are now able to outbid the United Kingdom.

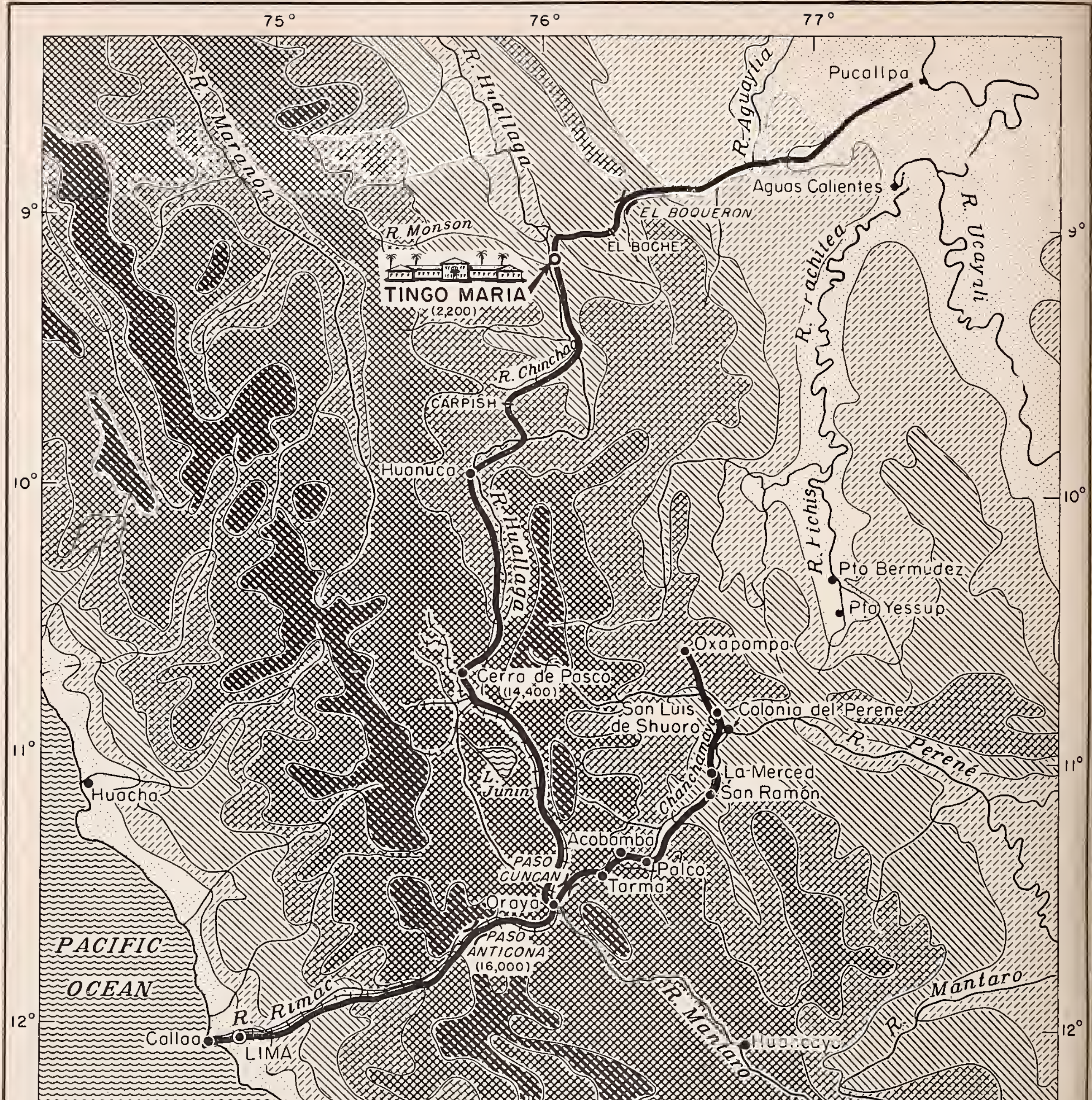
Some action has been taken to reduce bulk-buying operations other than in dollar areas. Such foodstuffs as tea, cocoa, poultry meat, and apples have been returned to private trade, and it is anticipated that eventually a number of other commodities will also be returned to private trading enterprises, although not in the immediate future. In a short supply market with an upward price trend, reduced bulk buying could result in higher procurement prices and other difficulties would exist. If bulk buying is terminated, special provision might be made in cases where the government has given long-term guaranties to producers (Australian meat or Commonwealth sugar).

Outlook

In 1952 there are more stringent controls over foreign exchange expenditures for imported foodstuffs than there were in 1950 or 1951.

It is not expected that derationing or removal of price control on basic foods such as sugar, meat, tea, fats, and eggs will take place in the next year, and there will probably be smaller supplies of unrationed foods. Additionally, because of the prevailing international situation, some food is being set aside for emergency war reserve stocks, which tends to reduce the amount available for current consumption as well as to accentuate supply problems.

Countryside in Wales. Despite Britain's efforts to increase farm output, its small farm acreage cannot feed the country's predominately urban population.



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